RESOURCE DEVELOPMENT COORDINATING COMMITTEE

Public Lands Section
Department of Natural Resources – Room 2000
January 8, 2008 - 9:00am

Minutes

Members Present:
ZAREKARIZI, Susan – Parks
BAILEY, Carmen DWR
GUNNELL, Roy – UDAF
WILCOX, Rick – SITLA
SEDDON, Matt – State History
GRUBAUGH-LITTIG, Pam – DOGM
SCHLOTTHAUER, Bill – Div. Water Rights
WILDE, Ken – DEQ/DDW
HARTY, Kimm - UGS
CLARK, Robert - DEQ/AQ
SEDDON, Matt – State History
DANIELS, Ron – Gov's Economic Advisory Office
MENATTI, John – DEQ/DERR
WIGLAMA, Jennifer - DFFSL
QUICK, Shelly – DEQ/WQ
PANAYOTOU, Dorrie – DEQ/WQ
STROMNESS, Rebecka – UDOT

Others Present:
CALL, Kenton – Forest Service
KAHLOW, Cathy – Forest Service
JEMMING, Jonathan – PLPCO
WRIGHT, Carolyn – PLPCO
PAYNE, Val - PLPCO
MOWER, Michael - GOPB
MYERS, Dave – Forest Service
GARCIA, Tim – Forest Service

Susan Zarekarizi, Chair, called the meeting to order at approximately 9:00 a.m.

I. Approval of Minutes

The minutes from the December 11, 2007 meeting were amended with minor corrections from **Kimm Harty. Pamela Grubaugh-Littig** amended the minutes to read the Lila Canyon extension to the Horse Canyon Mine, the Parties (UtahAmerican Energy, Inc., Southern Utah Wilderness Alliance, and the Division of Oil, Gas, and Mining) on December 10, 2007 signed a Joint Motion to Approve a Stipulation and to Dismiss the Request for Agency Action. The motion passed to approve the minutes as amended by **Ken Wilde**, and seconded by **Bob Clark**. The minutes passed unanimously.

II. Presentations/Discussions

Draft EIS Wild and Scenic River Suitability Study for National Forest System Lands in Utah – Kenton, Call (Forest Service), Cathy Kahlin (Forest Service),Val Payne (PLPCO) – Cathy updated the Committee members on the purpose of the WSR Act, Congress passed the Wild and Scenic Rivers Act (WSRA) in 1968. The WSRA was intended as a complement to the nation's dam policy. Rivers designated as part of the wild and scenic rivers system would help protect water quality and fulfill the national

conservation purposes. The Draft is out comments are due to PLPCO by **February 8, 2008.** Please see attached power point presentation for further details.

Quagga Mussels – Evan Freeman (DWR), **Evan** reported the mussels are native to Russia and have spread throughout Europe. The mussels have been sited in the Western US, Lower Colorado River, CA, AZ, NV, and Lake Powell, August 07. Please see attached power point presentation for further details.

III. Reports from Agencies on Any Anticipated Projects

No projects from agencies were given at this time.

IV. Adjournment

The meeting adjourned at approximately 10:10 am, the next meeting will be held at the Department of Natural Resources, room 2000.

Draft Environmental Impact Statement for
WILD AND SCENIC RIVERS SUITABILITY STUDY FOR NATIONAL FOREST SYSTEM LANDS IN UTAH

Utah National Forests
January/February 2008
Statewide Wild and Scenic Rivers Team

1

Purpose of the WSR Act

- Congress declared that the nation's dam policy be complemented with preserving selected rivers/segments
  - Protect water quality
  - Fulfill national conservation purposes
- Free flowing condition and associated Outstandingly Remarkable Values of selected rivers shall be protected for present and future generations

Utah Wild and Scenic River Suitability Study 2

The National Wild and Scenic Rivers System

- Since passage of the WSR Act in 1968
  - 163 rivers have been designated as wild, scenic, or recreational rivers.
  - 5,351 miles of wild, 2,457 miles of scenic, and 3,495 miles of recreational
- Utah is one of a handful of states without a river segment designated in the national system.
- More information can be found on the National Wild and Scenic River System website: http://www.nps.gov/rivers/

Utah Wild and Scenic River Suitability Study 3

Wild and Scenic Rivers in Surrounding States

Idaho
Clearwater (Middle Fork) WSR (USFS)
Rapid WSR (USFS)
Saint Joe WSR (USFS)
Salmon WSR (USFS)
Salmon (Middle Fork) WSR (USFS)
Snake WSR (USFS)

Wyoming
Yellowstone (Clarks Fork) WSR (USFS)

Colorado
Cache La Poudre WSR (NPS/USFS)

Nevada - *No WSR*

New Mexico
Jemez (East Fork) WSR (USFS)
Pecos WSR (USFS)
Rio Chama WSR (BLM/USFS)
Rio Grande WSR (BLM/USFS)

Other Neighbor States
California – 14
Oregon – 48
Montana – 2
Washington – 3

Arizona
Verde WSR (USFS)

Utah Wild and Scenic River Suitability Study 4

Where Are We Now in the Process?

HERE

1 Eligibility	2 Classification	3 Suitability	4 Designation
• Free-Flow? • ORVs?	• Access and Development? • Wild, Scenic, Recreation		• Congress' Opinion?

Utah Wild and Scenic River Suitability Study 5

Step 3. Determining Suitability

- Takes into account (among other things):
  - Is this river a 'worthy addition' to the national system?
  - Tradeoffs between development and protection
  - Status of land ownership
  - Potential uses of the land and related waters
  - Interest in designation or non-designation by federal, state, local, tribal, public and others
  - Estimated costs for management and protection of ORVs
  - Ability of agency to manage and/or protect the river
  - Historical or existing rights which could be affected

Utah Wild and Scenic River Suitability Study 6

How is suitability determined?

- Suitability is being analyzed by Team and documented in an Environmental Impact Statement (EIS).
- The Draft EIS explores **key issues** raised at public meetings and during a public scoping period in May/June 2007.
- In order to better understand the potential impacts of finding a river suitable, **six alternatives** were created for analysis.
- Once comments are received on a Draft EIS, a Final EIS will be prepared to accompany a Forest Service decision. *The Record of Decision will contain a determination of what river segments are suitable on National Forest System lands in Utah.*

Who will decide?

- The **six Forest Supervisors in Utah will decide** which rivers are found suitable.
  - Ashley National Forest – Kevin Elliott
  - Dixie National Forest – Robert MacWhorter
  - Fishlake National Forests – Vacant
  - Manti-La Sal National Forest – Howard Sargent
  - Uinta National Forest – Brian Ferebee
  - Wasatch-Cache National Forest –Brian Ferebee

Decision is a Recommendation

- Forest Service will consider comments on DEIS.
- Forest Service will release a Final EIS and Record of Decision. (Rivers not found suitable are released from further consideration.)
- Suitable river segments will be recommended to Secretary of Agriculture.
- Secretary of Agriculture may recommend suitable river segments to President of United States.
- President of United States may ask Congress to consider designation.
- Congress may designate some rivers and release others from further consideration.

Structure of DEIS

- Chapter 1 – Overview of Wild and Scenic Rivers Act, key study **issues**, relationship with other agencies
- Chapter 2 – Description of **alternatives**
- Chapter 3 – **Affected environment** and **environmental consequences**
- Chapter 4 – DEIS preparers
- Chapter 5 – References and glossary
- Appendices – **Suitability Evaluation Reports** for each river segment, list of BLM rivers, requirements of WSRA, effects of managing as part of national system, maps related to valid existing water rights

Key Issues for DEIS

- Issue 1 – Designation of river segments into the National Wild and Scenic River System may affect **existing or future water resource project developments.**
- Issue 2 – Uses and **activities may be precluded, limited, or enhanced** if river segment and its corridor were included in the national system.
- Issue 3 – Designation of a Wild and Scenic River could change the **economy of a community.**
- Issue 4 – Designation offers **long-term protection** of resource values.
- Issue 5 – **Consistency with wild and scenic river studies** conducted by the Bureau of Land Management and National Park Service.
- Issue 6 – **Consistency with state, county, and local government** laws and plans.

Alternatives for DEIS

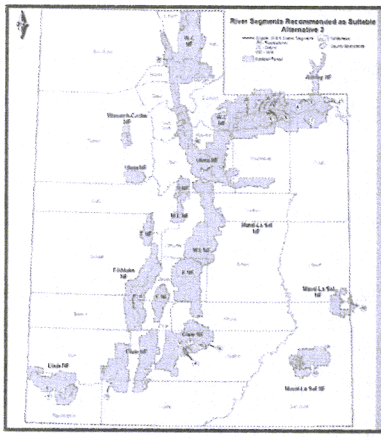
- Alternative 1 – **No action,** maintain eligibility of all river segments.
- Alternative 2 – **No rivers found suitable, none recommended.**
- Alternative 3 – Recommend rivers that **best represent Utah ORVs** while having the **least affect** on existing or reasonably foreseeable future **water resources projects** and other development activities.
- Alternative 4 – Recommend rivers that **best represent Utah ORVs** that **could be adversely affected** by existing or reasonably foreseeable future **water resources projects** and other developmental activities.
- Alternative 5 – Recommend rivers with **low cost for management** that are **consistent with other Federal wild and scenic studies** and which have **limited negative impact to community economic development.**
- Alternative 6 – Recommend river segments **recognized by public** groups that represent a diversity of river systems in Utah and those that face future threats.

Comparison of Alternatives

		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Number of Classifications*	Wild	0	0	14	7	36	17
	Scenic	0	0	9	10	13	18
	Recreation	0	0	5	9	6	10
Total Number of River Segments*		0	0	24	22	50	40
Miles of River Segment by Classification	Wild	0	0	131.8	46.9	393.9	216.4
	Scenic	0	0	55.6	64.1	88.6	112.8
	Recreation	0	0	24.5	92.0	47.8	112.0
Total Miles of River Segments		0	0	212	203	530	441

**Some river segments have more than one classification (e.g., a portion of the river segment is classified as Scenic and a portion is classified as Recreational, etc.)*

Alternative 3



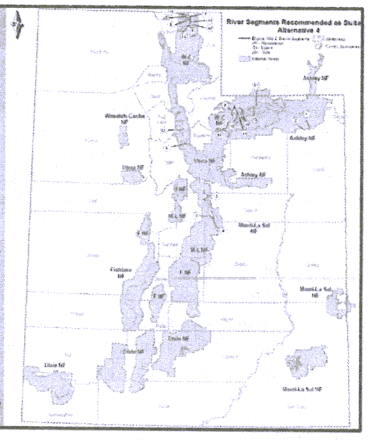
- 14 Wild, 9 Scenic, 5 Recreation
- 24 total segments
- 212 total miles found suitable
- 628 total miles not found suitable

ORV present:
- 123 miles scenic ORV
- 80 miles of recreation ORV
- 43 miles of fish ORV
- 138 miles of wildlife ORV
- 40 miles of historic/cultural ORV
- 99 miles of hydrological/geological ORV
- 111 miles of ecological ORV

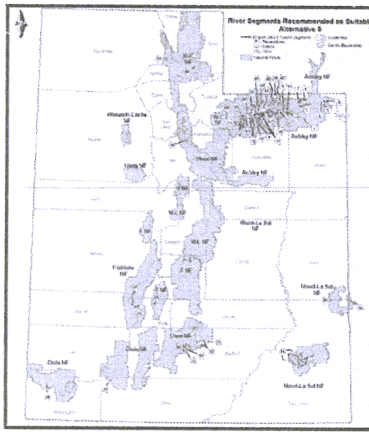
Alternative 4

- 7 Wild, 10 Scenic, 9 Recreation
- 22 total segments
- 203 total miles found suitable
- 637 total miles not found suitable

ORV present:
- 121 miles scenic ORV
- 58 miles of recreation ORV
- 46 miles of fish ORV
- 38 miles of wildlife ORV
- 31 miles of historic/cultural ORV
- 57 miles of hydrological/geological ORV
- 89 miles of ecological ORV



Alternative 5



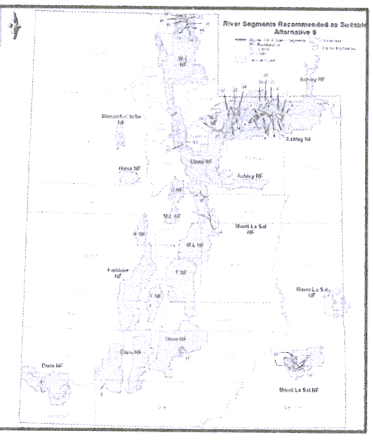
- 36 Wild, 13 Scenic, 6 Recreation
- 50 total segments
- 530 total miles found suitable
- 310 total miles not found suitable

ORV present:
- 290 miles scenic ORV
- 104 miles of recreation ORV
- 54 miles of fish ORV
- 18 miles of wildlife ORV
- 171 miles of historic/cultural ORV
- 148 miles of hydrological/geological ORV
- 142 miles of ecological ORV

Alternative 6

- 17 Wild, 18 Scenic, 10 Recreation
- 40 total segments
- 441 total miles found suitable
- 399 total miles not found suitable

ORV present:
- 212 miles scenic ORV
- 117 miles of recreation ORV
- 71 miles of fish ORV
- 142 miles of wildlife ORV
- 117 miles of historic/cultural ORV
- 156 miles of hydrological/geological ORV
- 120 miles of ecological ORV



Preferred Alternative

- **Alternative 3** has been identified by the six forest supervisors in Utah as the PREFERRED ALTERNATIVE.
- "[They] feel this alternative will provide recognition of Utah's unique river ORVs that would contribute to the Wild and Scenic River System, while resulting in the least impact to future planned development in the State while keeping long-term costs of management low" (DEIS 2-26).

Affected Environment and Environmental Consequences

- The affected environment and environmental consequences have been combined into one chapter (Chapter 3).
- The primary areas analyzed include:

scenery	recreation	fish/aquatics
wildlife	history/culture	geology/hydrology
ecology	botany	minerals
range	roads	water development
timber		social/economic environment

How can you be involved?

- Public Meetings
- Comment on the Draft Environmental Impact Statement
  - Due Feb 15, 2008
- Future Meetings

Public Meeting Schedule

*All Meetings are from **7:00-8:30 pm** (7:00 presentation, 7:30 open house)*

January 8	Provo, Utah – Courtyard Marriott, 1600 N. Freedom Blvd.
January 9	Escalante, Utah – Interagency Visitor's Center, 755 W. Main Street
January 10	St. George, Utah – Dixie Center, 1835 Convention Center Drive
January 17	Richfield – Snow College – Richfield, 800 W. 200 S.
January 22	Monticello – San Juan County Courthouse, 117 S. Main
January 23	Huntington – Huntington Town Hall, 40 N. Main Street
January 24	Vernal – Western Park Arena, 302 E. 200 S.
February 5	Ephraim – Snow College, 150 E. College Avenue
February 6	Salt Lake – Salt Lake City Public Library (Main Branch), 210 E. 400 S.

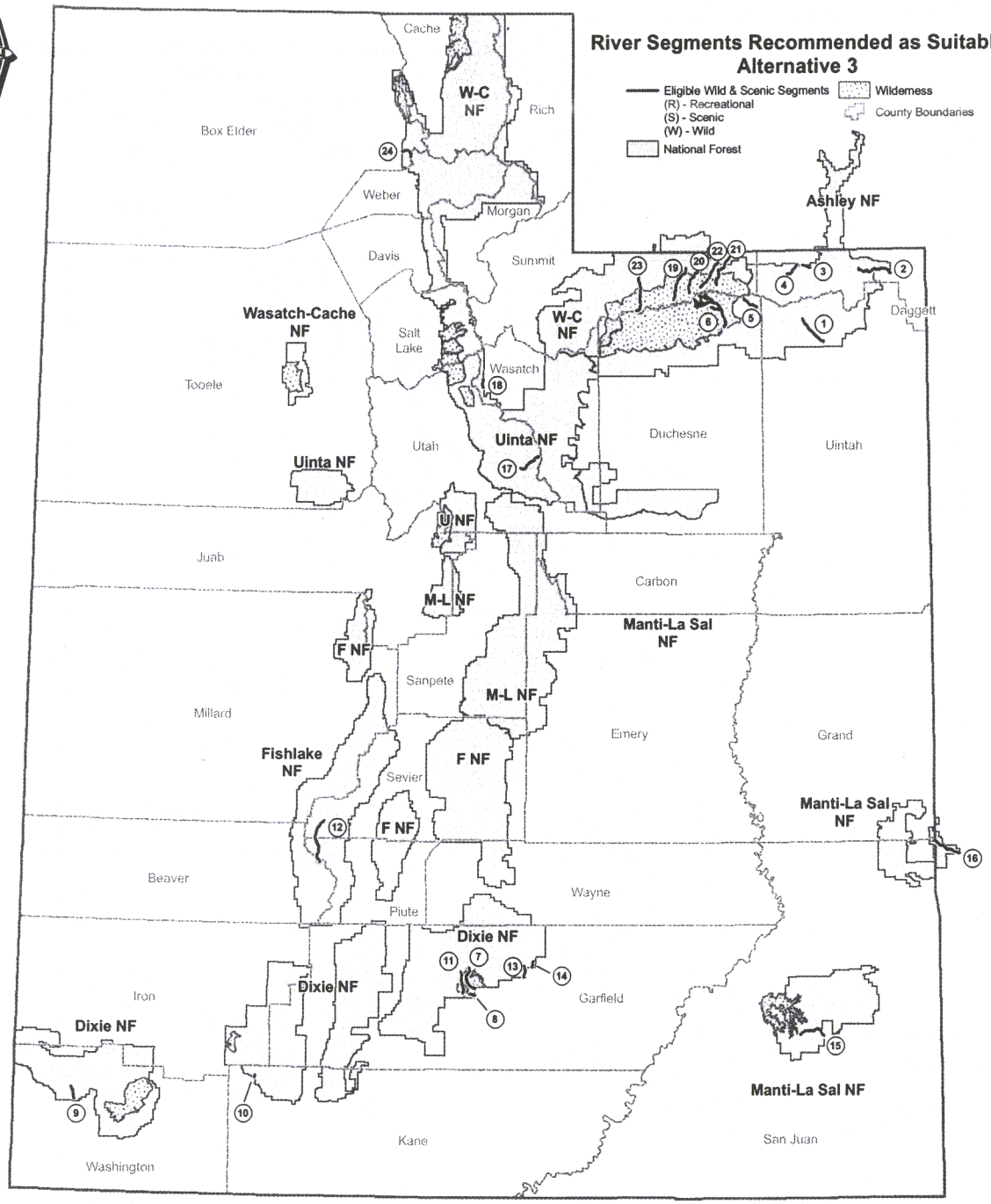
What to comment on? Where to send your comments?

- The **most useful comments** on the DEIS are about whether the Forest Service identified a full range of alternatives, all relevant issues, and accurately disclosed the effects of each alternative.
- Your comments are welcome from **December 7, 2007 to February 15, 2007.**
- **Email comments** to: utahnfwsdeis@fscomments.org.
- **Mail comments** to: Utah NF Wild and Scenic River DEIS, P.O. Box 162969, Sacramento, CA 95816-2969.
- **Fax comments** to: 916-456-6724.

For More Information

- Project Website
  http://www.fs.fed.us/r4/rivers/
- Contacts:

Cathy Kahlow, Forest Service	(435) 783-4338
Val Payne, State of Utah	(801) 537-9297
Kenton Call, Forest Service	(435) 865-3730



ASHLEY NATIONAL FOREST

1. Black Canyon (W)
2. Green River (S)
3. Lower Main Sheep Creek (R)
4. Middle Main Sheep Creek (R)
5. Reader Creek (S)
6. Upper Uinta River, including Gilbert Creek, Center Fork, and Painter Draw (W)

DIXIE NATIONAL FOREST

7. Death Hollow Creek (W)
8. Mamie Creek (W)
9. Moody Wash (W)
10. North Fork Virgin River (S)
11. Pine Creek (W)

FISHLAKE NATIONAL FOREST

12. Fish Creek (W) - Upper; (R) - Lower
13. Steep Creek (W) - only 4 miles recommended under Alt. 3
14. The Gulch (R)

MANTI-LA SAL NATIONAL FOREST

15. Hammond Canyon (S)
16. Roc Creek (W)

UINTA NATIONAL FOREST

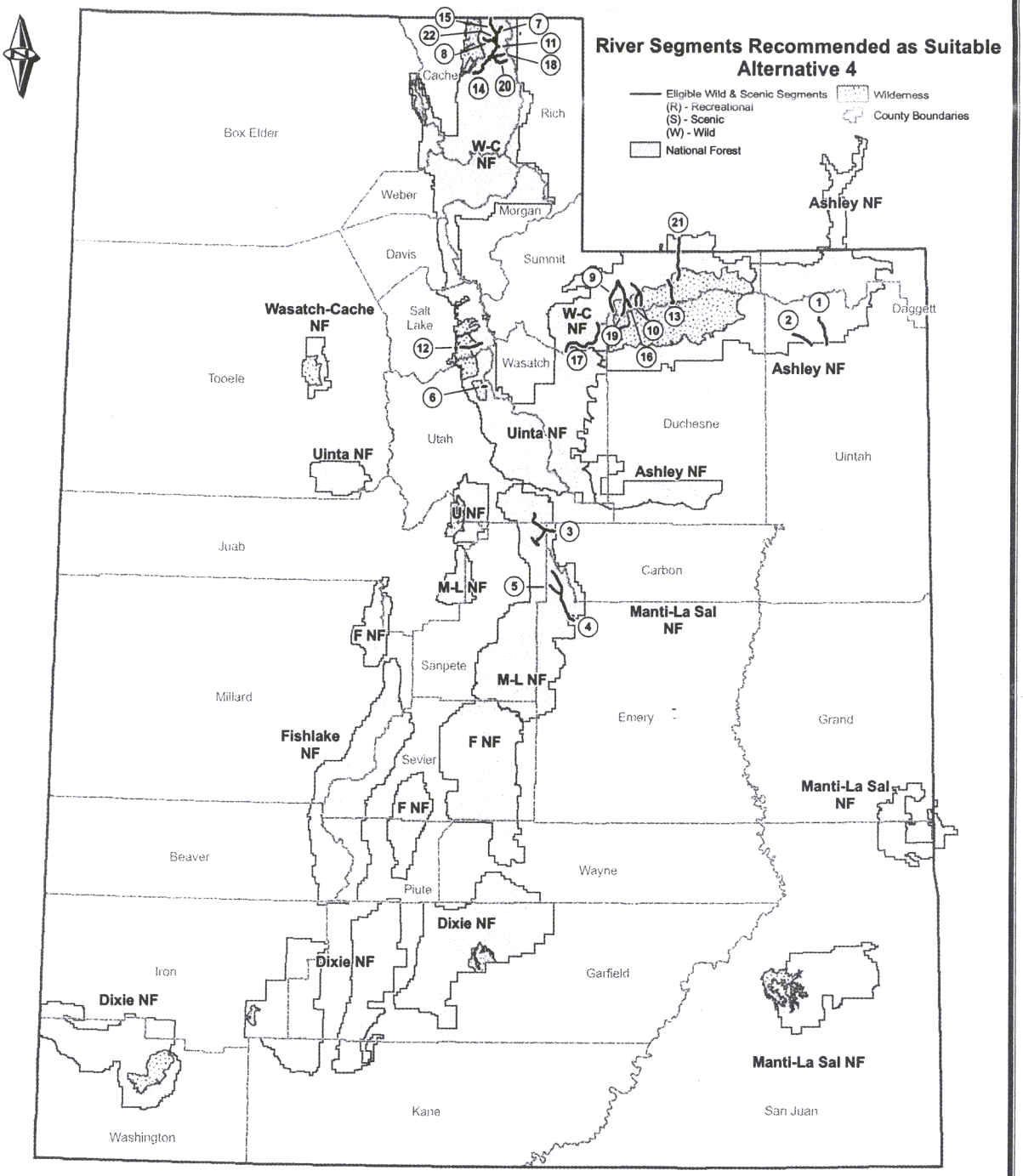
17. Fifth Water Creek (S)
18. Little Provo Deer Creek (R)

WASATCH-CACHE NATIONAL FOREST

19. East Fork Smiths Fork: Red Castle Lake to Trailhead (W)
20. Henry's Fork: Henry's Fork Lake to Trailhead (W)
21. Middle Fork Beaver Creek: Beaver Lake to Confluence with East Fork Beaver Creek (W) in wilderness; (S) below
22. West Fork Beaver Creek: Source to Forest Boundary (W) in wilderness; (S) below
23. West Fork Blacks Fork: Source to Trailhead (W) in wilderness; (S) below
24. Willard Creek: Source to Forest Boundary (S)

70 35 0 70 Miles

W-C NF GIS Lab 10/26/07



ASHLEY NATIONAL FOREST

(1) Ashley Gorge Creek (W)

(2) Lower Dry Fork Creek (R)

DIXIE NATIONAL FOREST

No Segments

FISHLAKE NATIONAL FOREST

No Segments

MANTI-LA SAL NATIONAL FOREST

(3) Fish and Gooseberry Creek (S) Upper Fish Creek and Lower Gooseberry; (R) Fish Creek

(4) Huntington Creek (R)

(5) Lower Left Fork of Huntington (S)

UINTA NATIONAL FOREST

(6) North Fork Provo River (W) in Wilderness; (R) below

WASATCH-CACHE NATIONAL FOREST

(7) Beaver Creek: South Boundary of State Land to Mouth (R)

(8) Bunchgrass Creek: Source to Mouth (S)

(9) Hayden Fork: Source to Mouth (R)

(10) Left, Right, and East Forks Bear River: Alsop Lake and Norice Lake to near Trailhead (W)

(11) Little Bear Creek: Little Bear Spring to Mouth (S)

(12) Little Cottonwood Creek: Source to Murray City Diversion (R)

(13) Little East Fork: Source to Mouth (W)

(14) Logan River: Confluence with Beaver Creek to Bridge at Guinavah-Malibu Campground (R)

(15) Logan River: Idaho State line to confluence with Beaver Creek (S)

(16) Ostler Fork: Source to Mouth (W)

(17) Provo River: Trial Lake to U35 Bridge (R)

(18) Spawn Creek: Source to Mouth (S)

(19) Stillwater Fork: Source to Mouth (W) in Wilderness; (S) below

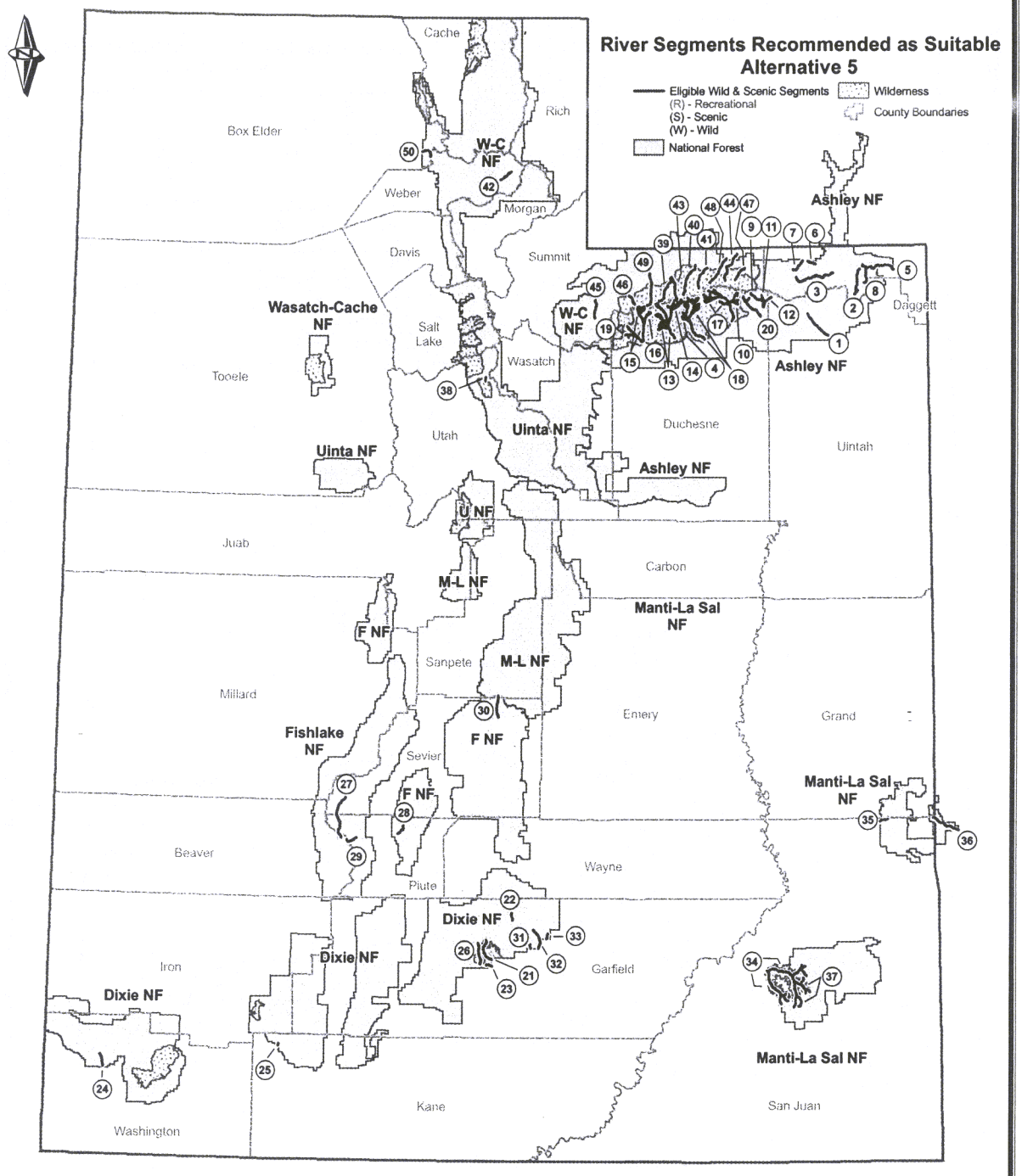
(20) Temple Fork: Source to Mouth (S)

(21) West Fork Smiths Fork: Source to Forest Boundary (W) in Wilderness; (S) below

(22) White Pine Creek: Source to Mouth (S)

70 35 0 70 Miles

W-C NF GIS Lab 10/26/07



ASHLEY NATIONAL FOREST

1. Black Canyon (W)
2. Cart Creek Proper (S)
3. Carter Creek (S)
4. Garfield Creek (W)
5. Green River (S)
6. Lower Main Sheep Creek (R)
7. Middle Main Sheep Creek (R)
8. Pipe Creek (S)
9. Reader Creek (S)
10. Shale Creek and Tributaries (W)
11. Upper Whiterocks River (S)
12. East Fork Whiterocks River (S)
13. Upper Lake Fork River, including Ottoson and East Basin Creeks (W)
14. Oweep Creek (W)
15. Upper Rock Creek (W)
16. Fall Creek (W)
17. Upper Uinta River, including Gilbert Creek, Center Fork, and Painter Draw (W)
18. Upper Yellowstone Creek, including Milk Creek (W)
19. West Fork Rock Creek, including Fish Creek (W)
20. West Fork Whiterocks River (S)

DIXIE NATIONAL FOREST

21. Death Hollow Creek (W)
22. East Fork Boulder Creek (W)
23. Mamie Creek (W)
24. Moody Wash (W)
25. North Fork Virgin River (S)
26. Pine Creek (W)

FISHLAKE NATIONAL FOREST

27. Fish Creek (W) - Upper; (R) - Lower
28. Manning Creek (W)
29. Pine Creek / Bullion Falls (W)
30. Salina Creek (W)
31. Slickrock (W)
32. Steep Creek (W)
33. The Gulch (R)

70 35 0 70 Miles

MANTI-LA SAL NATIONAL FOREST

34. Lower Dark Canyon, including Poison Canyon, Deadman Canyon, Woodenshoe and Cherry Canyons (W)
35. Mill Creek Gorge (W)
36. Roc Creek (W)
37. Upper Dark, Horse Pasture, Peavine & Kigalia Canyons in Upper Dark Canyon (R)

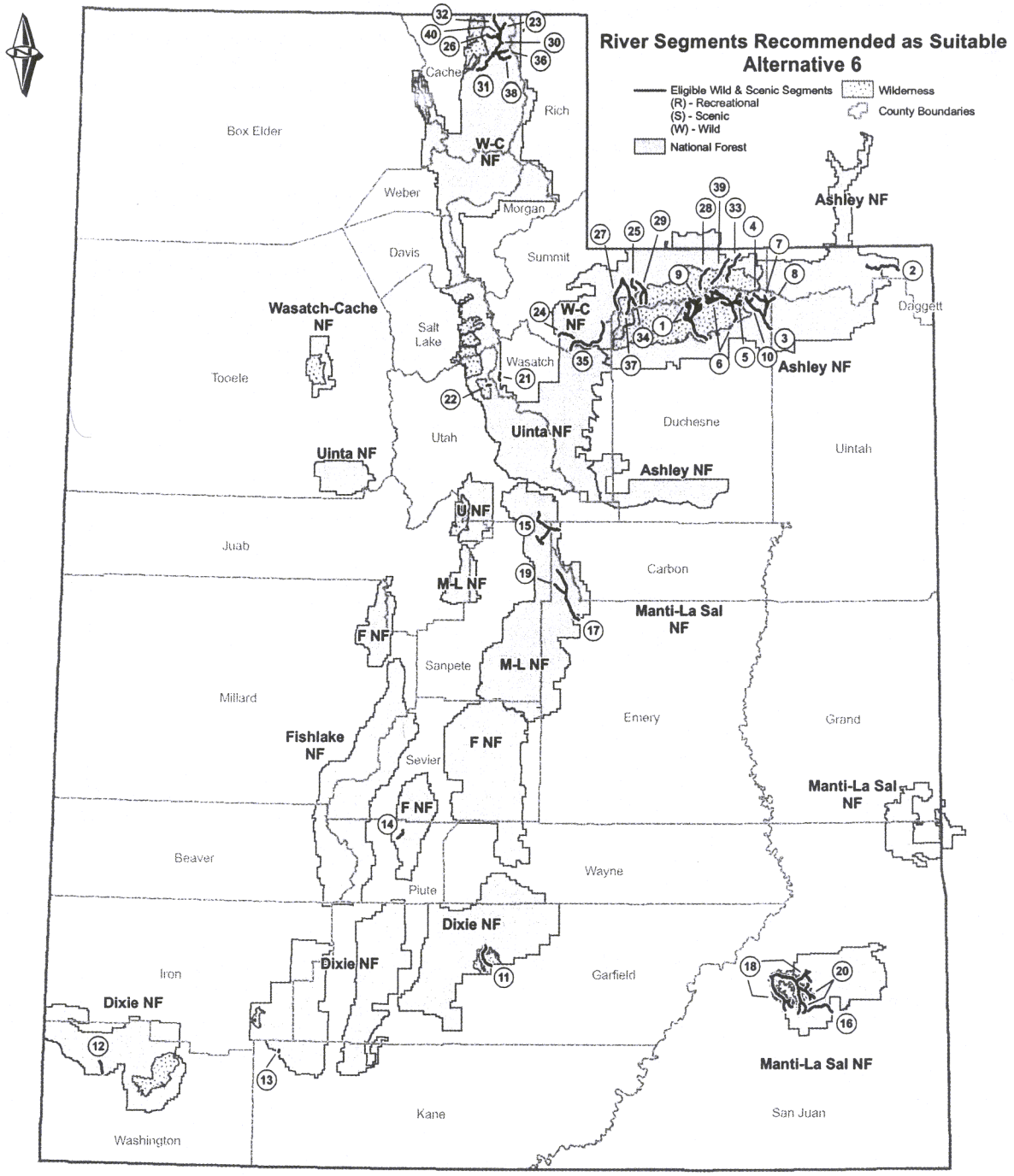
UINTA NATIONAL FOREST

38. South Fork American Fork (W) in wilderness; (R) below

WASATCH-CACHE NATIONAL FOREST

39. East Fork Blacks Fork: Headwaters to confluence with Little East Fork (W)
40. East Fork Smiths Fork: Red Castle Lake to Trailhead (W)
41. Henry's Fork: Henry's Fork Lake to Trailhead (W)
42. Left Fork South Fork Ogden River: Frost Canyon/Bear Canyon Confluence to Causey (W)
43. Little East Fork: Source to Mouth (W)
44. Middle Fork Beaver Creek: Beaver Lake to Confluence with East Fork Beaver Creek (W) in wilderness; (S) below
45. Middle Fork Weber River: Source to Forest Boundary (W)
46. Ostler Fork: Source to Mouth (W)
47. Thompson Creek: Source to Hoop Lake Diversion (W)
48. West Fork Beaver Creek: Source to Forest Boundary (W) in wilderness; (S) below
49. West Fork Blacks Fork: Source to Trailhead-(W) in wilderness; (S) below
50. Willard Creek: Source to Forest Boundary (S)

W-C NF GIS Lab 10/26/07



ASHLEY NATIONAL FOREST

1. Garfield Creek (W)
2. Green River (S)
3. Middle Whiterocks River (W)
4. Reader Creek (S)
5. Shale Creek and Tributaries (W)
6. Upper Uinta River, including Gilbert Creek, Center Fork and Painter Draw (W)
7. Upper Whiterocks River (S)
8. East Fork Whiterocks River (S)
9. Upper Yellowstone Creek, including Milk Creek (W)
10. West Fork Whiterocks River (S)

DIXIE NATIONAL FOREST

11. Death Hollow Creek (W)
12. Moody Wash (W)
13. North Fork Virgin River (S)

FISHLAKE NATIONAL FOREST

14. Manning Creek (W)

MANTI-LA SAL NATIONAL FOREST

15. Fish and Gooseberry Creek (S) Upper Fish Creek and Lower Gooseberry; (R) Fish Creek
16. Hammond Canyon (S)
17. Huntington Creek (R)
18. Lower Dark Canyon, including Poison Canyon, Deadman Canyon, Woodenshoe and Cherry Canyons (W)
19. Lower Left Fork of Huntington Creek (S)
20. Upper Dark, Horse Pasture, Peavine & Kigalia Canyons in Upper Dark Canyon (R)

UINTA NATIONAL FOREST

21. Little Provo Deer Creek (R)
22. North Fork Provo River (W) in Wilderness; (R) below

WASATCH-CACHE NATIONAL FOREST

23. Beaver Creek: South Boundary of State Land to Mouth (R)
24. Beaver Creek: Source to Forest Boundary (R)
25. Boundary Creek: Source to Confluence with East Fork Bear River (W)
26. Bunchgrass Creek: Source to Mouth (S)
27. Hayden Fork: Source to Mouth (R)
28. Henrys Fork: Henry's Fork Lake to Trailhead (W)
29. Left, Right, and Forks of Bear River: Alsop Lake and Norice Lake to near Trailhead (W)
30. Little Bear Creek: Little Bear Spring to Mouth (S)
31. Logan River: Confluence with Beaver Creek to Bridge at Guinavah-Malibu Campground (R)
32. Logan River: Idaho State Line to Confluence with Beaver Creek (S)
33. Middle Fork Beaver Creek: Beaver Lake to Confluence with East Fork Beaver Creek (W) in Wilderness; (S) below
34. Ostler Fork: Source to Mouth (W)
35. Provo River: Trial Lake to UT-35 bridge (R)
36. Spawn Creek: Source to Mouth (S)
37. Stillwater Fork (W) in Wilderness; (S) below
38. Temple Fork: Source to Mouth (S)
39. West Fork Beaver Creek: Source to Forest Boundary (W) in Wilderness; (S) below
40. White Pine Creek: Source to Mouth (S)

70 35 0 70 Miles

W-C NF GIS Lab 10/26/07

Come to a public meeting/open house to discuss the Forest Service's Draft EIS for Wild and Scenic Rivers Suitability!

Rivers on Ashley and Wasatch-Cache National Forests that are being studied in DEIS.

*All Meetings are from **7:00-8:30 pm** (7:00 presentation, 7:30 open house)*

January 8, Provo, Utah – Courtyard Marriott, 1600 N. Freedom Blvd.
January 9, Escalante, Utah – Interagency Visitor's Center, 755 W. Main Street
January 10, St. George, Utah – Dixie Center, 1835 Convention Center Drive
January 17, Richfield – Snow College – Richfield, 800 W. 200 S.
January 22, Monticello – San Juan County Courthouse, 117 S. Main
January 23, Huntington – Huntington Town Hall, 40 N. Main Street
January 24, Vernal – Western Park Arena, 302 E. 200 S.
February 5, Ephraim – Snow College, 150 E. College Avenue
February 6, Salt Lake – Salt Lake City Public Library (Main Branch), 210 E. 400 S.

For more information, http://www.fs.fed.us/r4/rivers/ or call (435) 865-3730 Kenton Call.

Dreissena Mussels
Quagga & Zebra
A Threat To Utah

"forever keep them out

or

forever live with them"

Utah Division of Wildlife Resources

Where Mussels Came From

- Native to Russia--spread throughout Europe
- Arrived St. Lawrence Seaway via transoceanic ship's ballast—mid 1980s
- Spread Throughout Great Lakes--Canada & US
- Mississippi River Basin to New Orleans
- East & Mid West US (100th Meridian)
- **2007 Western US**

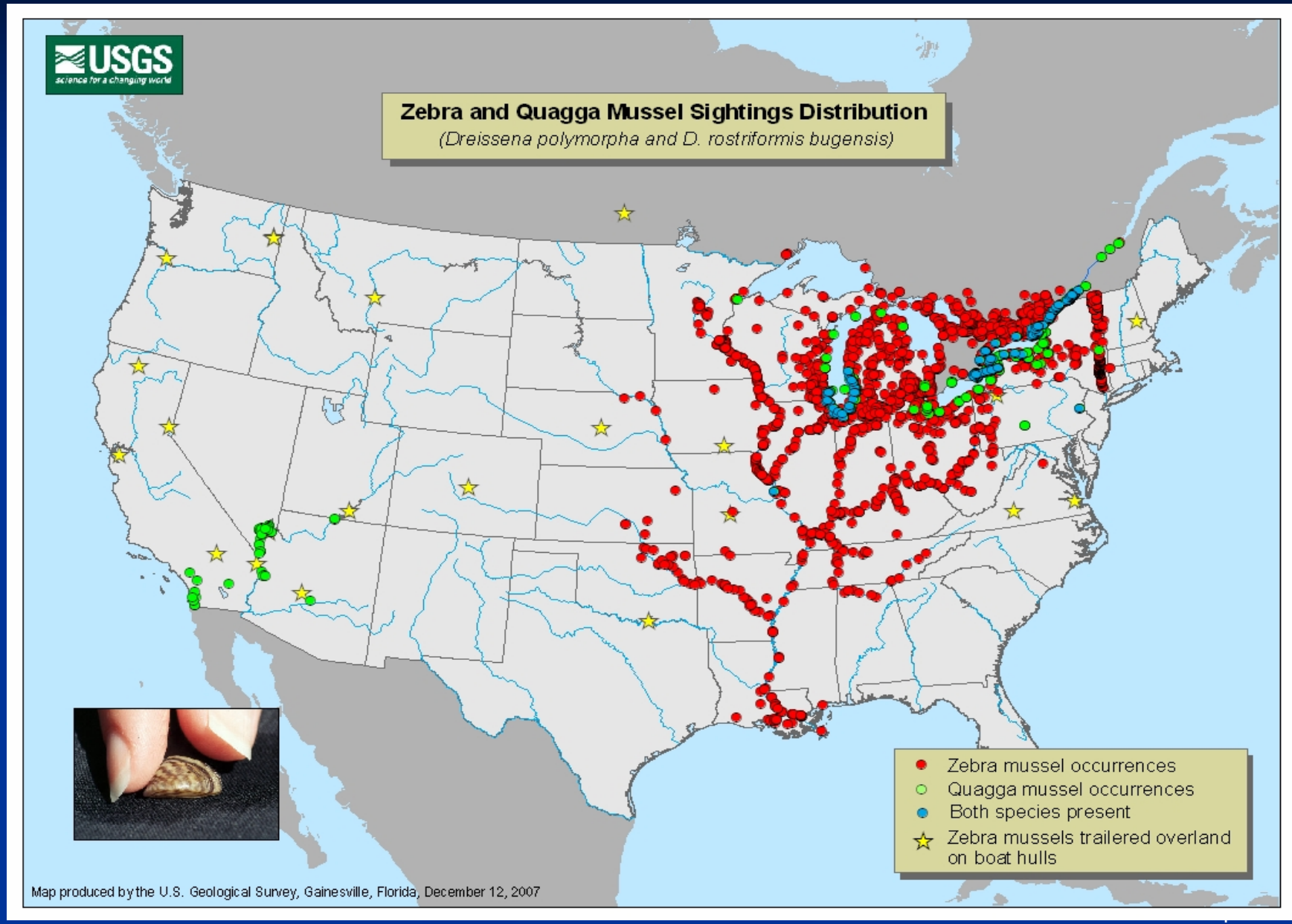
  *Lower Colorado River

  *CA, AZ, NV

  *Lake Powell, August 07

Mussels in the USA

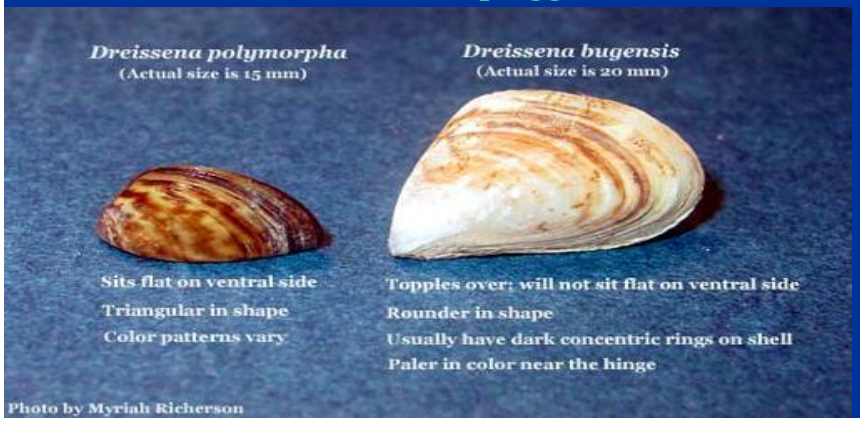
Mussels in the US



Understanding Mussels

- Invasive, non-native species
- Quagga & Zebra Mussels--nearly identical
- Two-shelled mollusk – like a clam
- Colonies can be 6" deep on entire lake bottom
- Quagga are a greater problem
  - Tolerates colder, deeper regions & uses soft surfaces
  - Quagga Displaces Zebra
  - Adult: Zebra = 12 mm; Quagga = 20 mm
  - Larvae: Veligers = microscopic to sand grain sized

zebra mussel quagga mussel



Economic & Environmental Perspective

- Currently costs Eastern U.S. ≈ $1.5 billion/year
  - 51% Electric Industry, 31% Water treatment, Industrial 8%

Great Lakes Comparison

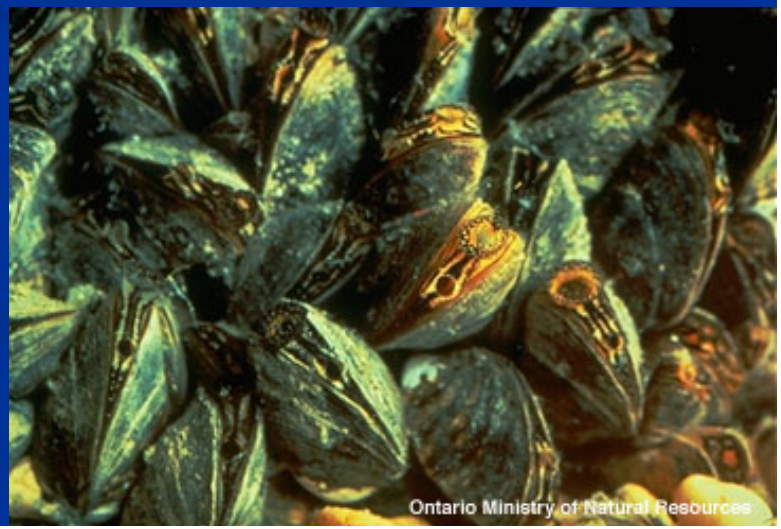
- 84% North America's surface water,

  18.5 Billion ac-ft
- Mussels have pushed entire ecosystem
- Lake Powell + Flaming Gorge =

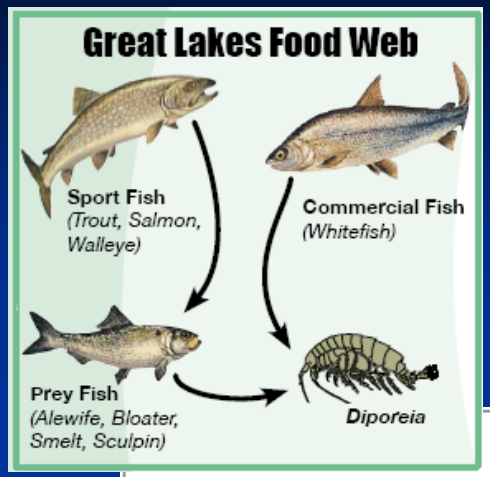
  0.2 % volume of Great Lakes

Mussel Environment Impacts

- Quagga & Zebra Mussels Are Filter Feeders:
  - Remove plankton
  - Filter volume of Lake Erie in 36 hours!!
- Feces Cause High Coliform Counts
- Pseudo Feces Rots = oxygen depletion & smell
- Stimulate Toxic Blue-green Algae Bloom & Botulism
- Fish Size & Population Decrease
- Species Change
- Dead Shells (sharp) Litter Beaches

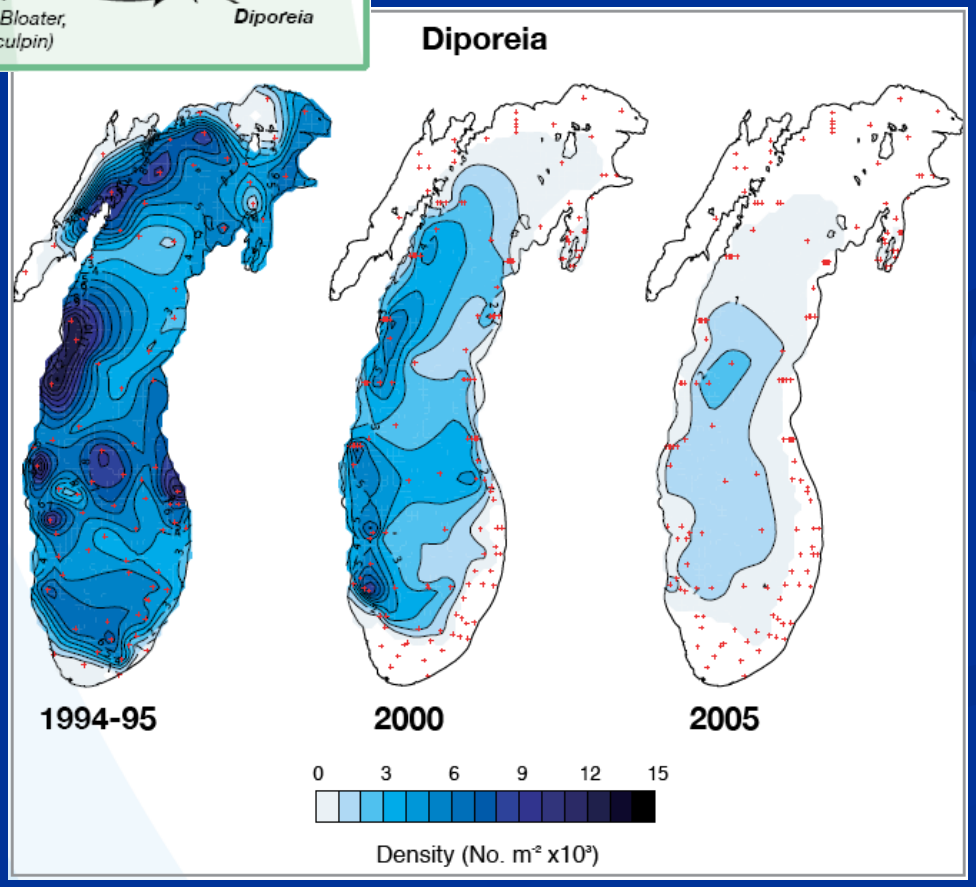


Aquatic Resources Impacts



Lake Ontario

Lake Trout numbers declined 95% in 10 years--**WHY?**



Utah's Waters

*Plankton decrease
Likely

*Species change
Likely

*Decreased "K" (length & weight)
Likely

*Loss of native mollusks
Likely

How Mussels Move

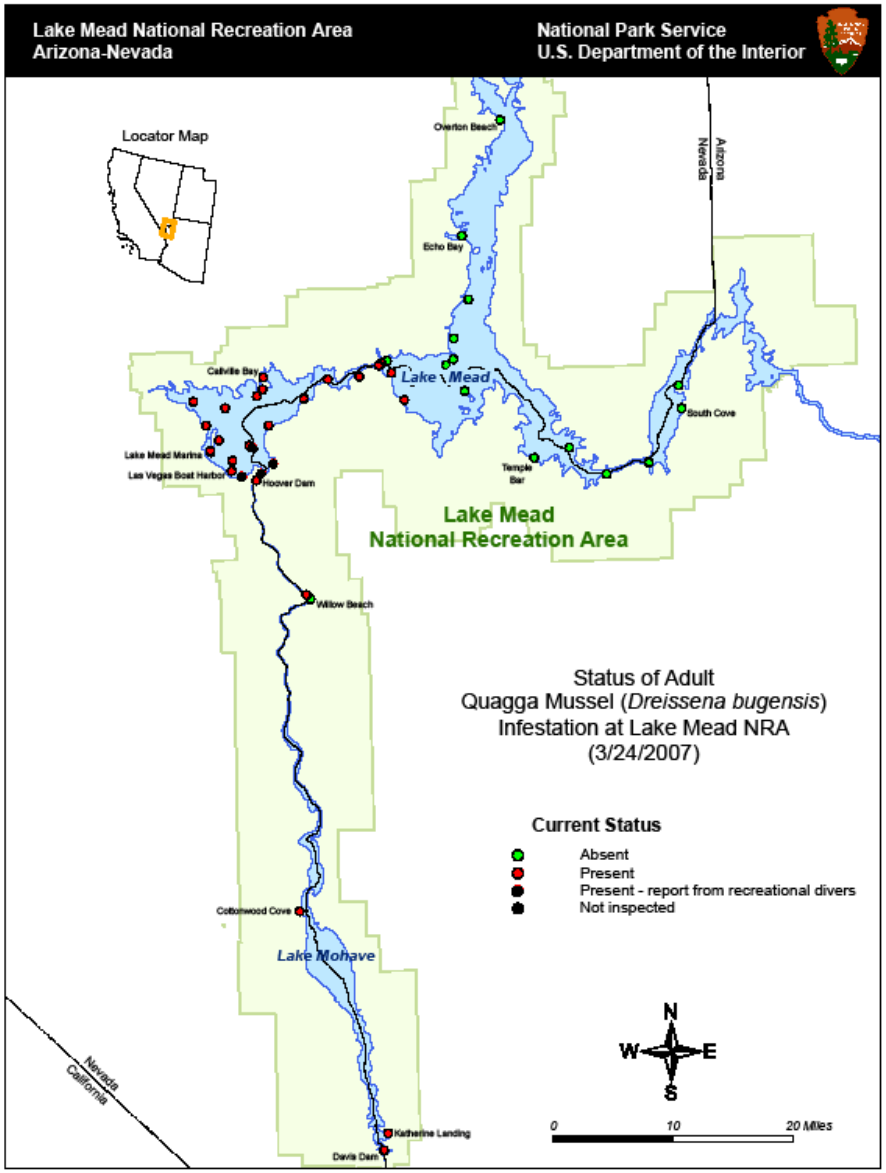
- Veligers drift downstream
- Boats are trailered from infested to non-infested waters
  - Failure to **Drain** bilge or live wells
  - Failure to **Dry** (5 days in UT)
  - Failure to **Remove** plants or animals
  - Failure to **Wash w/HOT** water

RISKS

Large boats on commercial trucks (huge)

Owner-pulled boats (less)

Mussels Western US Problem



January 2007

Quaggas found in

- Lakes Mead, Mohave & Havasu
- Colorado River
- NV fish hatcheries
- CA Reservoir (Copper Basin)

Mussels Now a Utah Problem

- Top 20 destinations of Lake Mead boaters
  - #3 Lake Powell
  - #11 Pineview Reservoir
  - #12 Bear Lake
  - #14 Willard Bay
  - #19 Jordanelle Reservoir
- August 2007– veligers detected in Lake Powell
  - Where do Lake Powell Boaters Go? EVERY WHERE
  - Once established, impossible to kill or remove them
- We can live with them (Estimated @ $17 million/yr);
- But, it would be much better & cheaper WITHOUT

IMPACTS: Industrial Plants

- Constrict water intakes
- Constrict plant facilities
- Increases:
  - biologic load
  - corrosion
  - plant operation costs

IMPACTS: Water Conveyance/Storage

Pipelines Impacts

- Over 1,200 miles of pipelines
- Greatly reduced flow capacity
- Increased maintenance $$$$

Canal Impacts

- About 4,600 miles of canals
- Open-channel flow capacity reduced
  - Earth-lined: 24% less flow
  - Concrete-lined: 52% less flow
- More maintenance $$$$
- 2ND Water Systems: plugged pipes & sprinklers

Reservoir Impacts

- 150 reservoirs @100+ ac (Storage/Recreation)
  - Seasonal Water Level Changes
  - Die Offs (fish & waterfowl)
  - Deteriorated water quality & odor
  - Difficult beach use: clean up $$$$

Successful Mussel Prevention Example

- Minnesota example: Land of 10,000 Lakes
  - 19 years exposure: commercial & recreation vessels
- **4** lakes & Mississippi River infested
- Effective Aquatic Nuisance Species Plan
  - **Emphasis on public education & awareness**
  - 12 full-time employees
  - 45 summer Watercraft Inspectors
  - Illegal drive w/any mussel life stage
  - $2.3 million annual budget

Emergency Responses in Utah

Emergency Response Action by DNR

- **DNR Policy:** ***Prevent Invasion of Zebra Mussel Into Utah Waters***
- UDWR: Lead Agency—Education via Interdiction & Containment, Outreach, Law Enforcement and Research
- SP&R: Outreach & Law Enforcement
- Division of Water Resources: Water Supply Mgmt & Threat/Data Analysis

- Collaboration with GCNRA (Lake Powell) & others

  (Includes Inter-state & Interagency Coordination—Routine "Mussel Folks" Conference Calls)
- Public education & awareness
  - Distributed 250,000 Zap the Zebra brochures

    (Includes all 65,000 UT Boat Owners)
  - Boat launch signs 6,000
  - Sportsmen group lectures
  - DWR & SP&R employee training

Emergency Mussel Plan for Utah

I. Workable UDWR Budget:

FY08 $1,106,500

FY09 $1,640,000

II. New UDWR Employees

Coordinators (2), Watercraft inspectors (29), Biologist I (5) & Conservation Officers (5)

- Fisheries: administration, education via interdiction & containment, monitoring/research
- Law Enforcement: develop & enforce rules
- Outreach: conduct public education & develop product

III. Special Boat Decontamination Equipment

IV. Training

Continued Collaboration Needed

Boat Pulled from Mead